

## CLAIMS

What is claimed is:

1           1.     A method of switching on an inductive load, a current of which is intended  
2 to repeatedly reach an end current value at desired time, comprising the steps of:

3           a.     measuring a time interval between a switching on time of the inductive load  
4 and a time that at least one intermediate current value of the current through the inductive load is  
5 reached;

6           b.     using the time interval measured in said step a. and the at least one  
7 intermediate current value to calculate an end current time interval from the switching-on time  
8 until the end current value is reached; and

9           c.     performing a switching-on of the inductive load at the end current time  
10 interval before the desired time.

1           2.     The method of claim 1, wherein said step b. comprises using a function  
2 representing the rate of current rise in the inductive load when a constant voltage is applied for  
3 calculating the end current time interval.

1           3.     The method of claim 2, wherein said step b. includes querying a memory  
2 for determining the function representing the rate of current rise.

1           4.     The method of claim 2 wherein said step b. includes calculating the  
2 function representing the rate of current rise from at least one intermediate current value and the

3 time interval between a switching-on time and the time at which at least one intermediate current  
4 valve is reached.

1 5. The method of claim 1, where said step b. comprises using the time  
2 interval measured in said step a. to calculate at least one parameter of a function and using the  
3 function, the at least one parameter and the end current valve to calculate the end current time  
4 interval.

1 6. The method of claim 5, wherein the function used in step b. comprises:

2 
$$i = \hat{i} (1 - e^{-tR/L})$$

3 wherein:

4  $i$  is the current at a time  $t$ ;

5  $\hat{i}$  is the current reached at infinity;

6  $R$  is the resistance; and

7  $L$  is the inductance.

1 7. The method of claim 2, wherein the function used in said step b. is stored  
2 as a table including a plurality of intermediate current values assigned to corresponding values of  
3 end current time intervals.

1 8. The method of claim 3, wherein the function used in said step b. is stored  
2 as a table including a plurality of intermediate current values assigned to corresponding values of  
3 end current time intervals.

1           9.     The method of claim 4, wherein the function used in said step b. is stored  
2 as a table including a plurality of intermediate current values assigned to corresponding values of  
3 end current time intervals.

1           10.    The method of claim 2, where step b. further includes determining a  
2 correction value representing a curvature of the function and calculating the end current time  
3 interval in accordance with the rule of three using the correction value.

1           11.    The method of claim 1, wherein said step b. comprises calculating the end  
2 current time interval in accordance with the rule of three.